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## Reliability, Faking Susceptibility, and Discriminant Validity of the Basic Personality Inventory

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RELIABILITY, FAKING SUSCEPTIBILITY, AND DISCRIMINANT VALIDITY  
OF THE BASIC PERSONALITY INVENTORY

BY

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A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE  
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## ABSTRACT

The Minnesota Multiphasic Personality Inventory (MMPI) represents the most frequently used and researched personality instrument available today (Edwards and Abbott, 1973). Yet, despite its popularity as a diagnostic instrument in mental health settings, reviewers generally agree that the MMPI is a "psychometric monstrosity" (Rodgers, 1972). The recently developed Basic Personality Inventory or BPI (Jackson, 1974) represents a potential alternative to the presently popular MMPI. The reliability, susceptibility to dissimulation, and discriminant validity of the BPI scales were examined in this study. The BPI was administered to 168 university students and 224 community college students. Data from the first sample ( $N = 168$ ) was used primarily to conduct an internal consistency and test-retest analysis of the BPI. It was hypothesized that the BPI scales would demonstrate adequate reliability ( $r \geq .70$ ). This hypothesis was supported for some scales but not for others. One explanation given for the lower than expected reliability coefficients was the restricted variability observed in the population studied. It was suggested that reliability coefficients based on a clinical population would probably be higher. The observed reliabilities, however, were generally higher than those reported for the MMPI scales. The second sample ( $N = 224$ ) was used primarily to investigate

the faking susceptibility of the scales. It was predicted that mean scale scores for persons receiving standard instructions ( $n = 124$ ) would be significantly higher than mean scale scores obtained from persons receiving "fake good adjustment" instructions ( $n = 50$ ), and significantly lower than mean scale scores obtained from persons receiving the "fake maladjustment" instructions ( $n = 50$ ). In general, this prediction was supported. The extent of faking success, however, depended on the scale involved. A stepwise discriminant analysis of this data suggested that three scales, the Deviation scale, the Self Depreciation scale, and the Denial scale could successfully be used as validity scales.

Finally, scale intercorrelations were computed separately for the community college students (standard instructions group only) and both administrations of the BPI to the university students. Scale intercorrelations were examined in an attempt to provide initial evidence of discriminant validity for the twelve BPI scales. It was predicted that near zero scale intercorrelations, and thus good discriminant validity, would be observed. The results, however, were mixed. Evidence of good discriminant validity was obtained from the community college data but not from the university data.

It was concluded that much research still remains to be conducted, but evidence presented here suggests that Jackson's Basic Personality Inventory (BPI) remains a promising alternative to the presently popular MMPI.

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To my son Michael and my daughter Alicia

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## INTRODUCTION

In clinical psychology, the role of assessment is obvious and crucial. Practitioners rely heavily on assessment procedures to aid in diagnostic decision making (Lanyon and Goodstein, 1971). Assessment information provides the basis for decisions which have incredibly important implications for the client. The results may determine whether or not the person is considered sane, what behaviors are abnormal, what treatment plan should be enacted, whether hospitalization is required, whether the person may continue his or her job, be sentenced to prison, or allowed to keep his or her children. Thus, we expect the assessment techniques used to make these judgements to be the best available.

One popular source of diagnostic information is the Minnesota Multiphasic Personality Inventory or MMPI (Hathaway and McKinley, 1967). The MMPI is generally considered to be a convenient, economical, and time saving method for screening patients (Sundberg, 1977), describing abnormal behavior patterns (Little and Shneidman, 1954), and aiding in diagnostic decision making (Martin, 1977). Is the MMPI, however, the best self-report personality inventory available? The research reported here is related primarily to this question. As McReynolds (1977) points out, behavioral scientists and practitioners must keep abreast of new developments in the area of assessment. New instruments must be extensively researched and compared to existing measures. When better assessment measures exist,

older ones must be replaced. What follows is a critical review considering the present status of the MMPI, a description of a potential alternative - Jackson's (1974) Basic Personality Inventory (BPI), and an initial empirical evaluation of some psychometric properties of Jackson's instrument.

Edwards and Abbott (1973) reported that the Minnesota Multiphasic Personality Inventory (MMPI) has been, and continues to be the most frequently used personality measure. Since its publication in 1943, it has been involved in over 4,000 studies. Today, the MMPI is primarily used to aid in psychiatric diagnosis and treatment planning; but is also widely used to determine job suitability and admission to educational programs (Harvey and Sipprelle, 1976). Despite its popularity, however, most reviewers concede that the MMPI suffers from a number of serious psychometric problems.

The most frequently voiced criticisms concern its poor reliability and excessive redundancy (Anastasi, 1976; Butcher, 1969; Cronbach, 1970; Lanyon and Goodstein, 1971). Estimated reliability coefficients from both normal and deviant samples have been generally poor. In one test-retest study, Gilliland and Golgin (1951) reported that six of the nine original clinical scales contained between 30 and 60 percent measurement error. Other studies involving various populations and test-retest intervals have reported similar findings (Blanton and Landsman, 1952; Cottle, 1950; McQuary and Truax, 1952). Similarly, internal consistency coefficients have been generally disappointing; ranging from near zero to the low .90's depending on the population and scales involved (Dahlstrom, Welsh and Dahlstrom, 1972). Welsh

(1952), for example, reported corrected split-half reliabilities based on a sample of general psychiatric inpatients ranging from .11 to .84. Six coefficients were below .60. In a study employing normal college students, Gilliland and Colgin (1952) reported similar findings. Corrected split-half reliabilities ranged from near zero to .81 with five coefficients below .60. The excessive error variance associated with several of the MMPI scales represents a serious weakness since scale unreliability directly affects the reliability of profile patterns and subsequent interpretations.

Other critics have focused their attention on the issue of redundancy. Factorial studies of the MMPI scales have consistently found that only two constructs are necessary to account for most of the information in the profile (Block, 1965; Kassenbaum, Couch, and Slater, 1959; Messick and Jackson, 1961; Welsh, 1956). This is not surprising, however, considering that many of the MMPI scales are highly correlated (Dahlstrom, Welsh, and Dahlstrom, 1972). One reason for this is that many of the pathological items are very similar (Block, 1965). Another reason is that a large number of items are scored on more than one scale. For example, a "true" response to item 32 adds one point to the following scales: 2, 3, 4, 7, 8, and 0. Finally, the excessive redundancy can be partly accounted for by the item development procedures used by the authors. No attention was paid to divergent validity. An item was selected if it significantly discriminated between a given pathological criterion group and a normal comparison sample. Discrimination between the various pathological groups was ignored. Considering the length of this

inventory and the number of scales involved, reports that the MMPI scales only measure two independent constructs are disappointing. Certainly these constructs, given their psychological importance, can be measured more efficiently. Moreover, it is doubtful that only two constructs can adequately account for the diverse individual differences evident in the pathological behavior domain.

Another area of concern involves the MMPI's sensitivity to response distortion; specifically, social desirability bias, acquiescence bias, and faking. At one point, Edwards (1964) and Messick and Jackson (1961) argued that the two principal factors underlying the MMPI scales reflected nothing more than social desirability and acquiescence response bias. The MMPI did not, in their opinion, measure psychopathology. In fact, a number of studies have reported a high significant correlation between desirability ratings of MMPI items and the primary factor underlying the scales (Edwards, 1967; Jackson and Messick, 1961, 1962a, 1962b). In addition, Jackson and Messick reported that the second principal factor separated true keyed scales from false keyed scales in three separate studies. However, Block (1965) has presented strong counter evidence supporting a content-oriented interpretation. He controlled for the influence of social desirability and acquiescence in a series of factor analytic studies and found that his modified MMPI scales produced the same factor structure as the original scales. Block concluded that item content rather than social desirability value or acquiescence style was a more important determiner of item endorsement. Edwards, as well as Jackson and Messick, have since

modified their original position, but the relative influences of content vs. response set factors remains a matter of dispute (Jackson, 1973). In any case, many of the MMPI items are confounded by their desirability value.

Although it is probably impossible to eliminate desirability influences in inventories like the MMPI, confounding can be effectively minimized by careful item selection procedures. Jackson and Lay (1968), for example, demonstrated that when test items were originally selected with a low level of association with desirability responding, it was possible to distinguish content factors from a desirability factor and thus measure each separately. This procedure has been described in detail by Jackson (1970) and used successfully in the construction of three recently published and promising personality instruments: the Personality Research Form (Jackson, 1967); the Differential Personality Inventory (Jackson, 1972); and the Jackson Personality Scales (1976). Although the influence of acquiescence is not as important as originally claimed, it can have a significant effect on scales with a disproportionate number of items keyed in a single direction (Campbell et al., 1967). Since many of the MMPI scales have this characteristic, specifically, the Hysteria, Psychopathic Deviate, Paranoia, and Hypomania scales (Campbell et al., 1967), acquiescence remains a problem. Messick and Jackson (1961) recommend balancing scales for true and false keying to restrict the influence of acquiescence. This strategy has since been adopted by most test developers.

Considerable research effort has been spent investigating the

problem of dissimulation on personality scales and inventories. The ability of subjects to consciously fake responses on the MMPI is well established. In simulation studies, prison inmates (Gendreau et al., 1973). Air Force males (Anthony, 1971), college students (Wiggins, 1959) and psychiatric patients (Grayson and Olinger, 1957) have all demonstrated successful dissimulation on the MMPI. In actual clinical settings where a person's self descriptions can affect, if not determine crucial decisions influencing his life, the motivation to fake would be expected to be very high. Wilcox and Krasnoff (1967) demonstrated that clinical settings can indeed elicit dissimulation. In their study, psychiatric patients dissimulated more if told that the MMPI would be instrumental in determining their chances of discharge from the hospital. To control dissimulation, the MMPI relies on three validity scales which have enjoyed a high degree of claimed success. Turnbull (1971) reported that 14 out of 18 faking studies employing the MMPI noted successful detection of faking by the appropriate scales. However, in a recent article Kroger and Turnbull (1975) demonstrated that when dissimulation was achieved via role faking; this is, responding as if one were in a particular social position (e. g. psychiatric patient, salesman, etc.) the validity scales were ineffective. It seems, at least with respect to the MMPI, that the successful detection of faking may depend on the strategy the test-taker uses to dissimulate.

Other criticisms have been made against the MMPI validity scales. Jackson (1973), for example, notes that although the F scale is generally successful in identifying invalid profiles, F scale scores



are often elevated for individuals who have answered honestly, especially when they possess the psychopathology reflected in many of the items. Furthermore, the use of the K scale as a correction device is open to considerable question. Although this scale was based on the suppressor variable rationale to correct for defensiveness, Jackson points out that no studies have sought to cross validate its use as a suppressor variable. Finally, elevated scores on the Lie scale may in fact indicate conscious faking "...or it may be indicative of a more subtle form of bias in self regard, one which ought to be considered in the overall interpretation of the test, but which does not require throwing out the entire protocol as invalid" (p. 785). The usefulness of the Lie scale has been further questioned by Harvey and Sippelle (1976). When it was advantageous to obtain a certain job or to be admitted to a psychotherapy group, they found that normal college students produced MMPI profiles which reflected their specific goal. The Lie scale failed to discriminate fakers from a control group. Although the F scale was effective in identifying fakers, it did so on the basis of items having obvious pathological content. Thus, faking normals would not be discriminated from those individuals actually possessing the pathology indicated by the items and answering honestly. It appears then, in summary, that the MMPI can be easily faked, and the usefulness of the validity keys remains a matter of dispute.

Besides poor reliability, excessive redundancy, and problems associated with response distortion; criticism has been made concerning the MMPI's standardization, item selection, and available

norms (Anastasi, 1976; Cronbach, 1970; Gynther, 1972; Rodgers, 1972). One limitation concerns the reference groups used for item selection. Psychiatric diagnostic categories are notoriously unreliable (Lorr, 1970), and as Cronbach (1970) points out, the number of cases in each patient group was relatively small, averaging only about 50. Thus, chance probably played a significant role in assigning items to scales. Also, the standard scores were based on the performance of approximately 700 Minnesota adults tested in the late 1930's and early 40's. Therefore, the present norms are not only unrepresentative of adults in general, but are also obsolete. Since the late 1930's and early 1940's, there have been many changes in lifestyles and attitudes, and consequently in what is considered to be deviant or normal. It is unlikely that the norms and item selection would be the same had they been determined within the last five years.

Another limitation concerns the availability of norms for special groups. Klinge and Strauss (1976) point out that factors of age and race have been generally overlooked in interpreting MMPI profiles to the demise of accurate assessment and treatment planning. Standard norms, for example, have often been used to evaluate the profiles of adolescent psychiatric inpatients. Employing both standard and age appropriate norms, they found that the profiles of adolescent psychiatric patients were more elevated and more classified as psychotic when adult standard norms were used. The original norms of the MMPI also appear inappropriate when groups differ in race, education, socioeconomic status, ethnic origin, or geographic area

(Gynther, 1972; Rodgers, 1972). Normal blacks and college students, for example, generally produce elevated profiles. While norms for some special groups are now available (Dahlstrom, Welsh, and Dahlstrom, 1972; Lanyon, 1968), they are seldom used in practice.

Considering that the MMPI appears to be a "psychometric monstrosity", why then its continued use? Its popularity indicates that there is an apparent need for such an instrument. The MMPI fills this need by providing the test user with an assessment device which takes a negligible amount of time to administer and interpret. Actuarial interpretations permit assessment inferences made in terms of currently accepted diagnostic clinical categories. Further, the enormous literature pertaining to its usefulness in many different situations for the screening of emotional and adjustment problems, and the appraisal of severity of psychiatric disorder have made it an attractive instrument. Although reported validity coefficients have at best been moderate this is still more evidence for validity than other scales and inventories have presently reported; especially when considered in relation to the MMPI's costs in time, money, and effort (Meehl, 1972). Finally, it should be noted that until very recently, there have been no real competitors with the MMPI. Other structured broad scale inventories that have been developed have been intended for normal populations.

Recently, a number of researchers have attempted to construct new structured self report instruments to be used in mental health settings with better psychometric properties. Cattell's (1971) Clinical Analysis Questionnaire (CAQ). Jackson's (1972) Differential

Personality Inventory (DPI), Jackson's (1974) Basic Personality Inventory (BPI), and Lanyon's (1970) Psychological Screening Inventory (PSI) are examples of such instruments. The recent interest in developing new structured self report instruments primarily relevant to psychopathology was motivated by a desire to provide psychometrically sound alternatives to the currently popular MMPI. Evidence pertaining to the usefulness of the CAQ, DPI, and PSI is rapidly accumulating (cf. Buros, 1972; Edwards & Abbott, 1973). However, no reliability or validity data have been reported for the BPI. Presently, this device is only a research instrument and is not available for general use. The strength of this particular measurement instrument, however, lies in the nature of its construction.

The Basic Personality Inventory (BPI) was developed by Douglas Jackson (1974) to be used in clinical and counseling settings. It is, like the MMPI, a structured self report personality inventory with a true/false format, but unlike the MMPI it was designed to measure 12 independent personality factors relevant to the pathological behavior domain. The 12 scales of the BPI were derived from an extensive item and factor analysis done using the MMPI and DPI item pools. (Jackson, note 1). Jackson contends that the 12 BPI factors represent the important dimensions or major sources of behavior variation in the general domain of personality dysfunction. The instrument was designed to be extremely efficient. The entire inventory consists of only 240 items; less than half of the items included in the MMPI. To reduce the influence of acquiescence, each scale was balanced for true

and false keying. Further, social desirability confounding was restricted by including in the final scales only those items demonstrating a low association with this variable. Thus, the strength of the BPI lies in the nature of its construction. A modern construction strategy (Jackson, 1970) was employed to maximize reliability, validity, coverage, and efficiency while minimizing the influence of response distortion; areas of demonstrated weakness in the MMPI.

Research evidence testing the psychometric properties and usefulness of the BPI is presently nonexistent. The principal objectives of this study were to empirically examine the BPI's reliability, susceptibility to dissimulation, and discriminant validity. To achieve this end, two independent samples were selected. The first sample, composed of university students was used to conduct an internal consistency and test-retest analysis of the BPI scales. Given the nature of the BPI's construction, it was hypothesized that the BPI scales would demonstrate adequate reliability. Specifically it was predicted that estimates of internal consistency and temporal stability would be equal to or greater than .70 for each scale. The second sample, composed of community college students, was used to evaluate the BPI's susceptibility to two relevant faking sets - faking good adjustment and faking maladjustment. Of particular interest was the extent to which the BPI scales could be faked, and the relative sensitivity of each scale. Consistent with the general literature pertaining to "faking" and self report personality instruments, it was expected that the BPI scales

would be fakeable. This was the second hypothesis considered in this study. Thus it was predicted that mean scale scores would be a function of the test taking instructions administered to each group. Specifically, mean scale scores for persons receiving standard instructions were predicted to be significantly higher than the mean scale scores obtained from persons receiving the "fake good adjustment" instructions, and significantly lower than the mean scale scores obtained from persons receiving the "fake maladjustment" instructions. Finally, information from the university (test 1 and 2), and the community college (standard instructions) samples was used to evaluate the discriminant validity of the scales. Based on the construction strategy used to develop the BPI, it was hypothesized that the scales would exhibit good discriminant validity. Thus, it was predicted that near zero correlations between scales would be observed for both the university and community college samples.

## METHOD

### Subjects

An initial sample of 221 undergraduates from the University of Rhode Island (URI) was used to assess the reliability of the BPI. Only 168 students, however, attended both testing sessions and submitted completed questionnaires. Thus the reliability analysis was restricted to these students. The sample consisted of male ( $n = 71$ ) and female ( $n = 97$ ) volunteers sampled from elementary psychology classes who ranged in age from 18 to 23 ( $\bar{X} = 19$  yrs. 3 mos.). A second sample of 224 undergraduate volunteers from lower level psychology courses offered at the Community College of Rhode Island (CCRI) participated in the dissimulation study. These students, 142 females and 82 males, ranged in age from 17 to 31 ( $\bar{X} = 20$  yrs. 7 mos.). Students from both colleges were given extra course credit for participating in the BPI study.

### Instrument

The Basic Personality Inventory (BPI) yields a 12 factor profile intended to be useful in identifying pathological behavior patterns. The BPI factors making up the profile are: Hypochondriasis, Depression, Denial, Interpersonal Problems, Social Deviation, Persecutory Ideas, Anxiety, Thinking Disorder, Impulse Expression, Social Introversion, Self Depreciation, and Deviation. A complete

TABLE 1

BASIC PERSONALITY INVENTORY TRAIT DESCRIPTIONS

---

## Hypochondriasis

High Scorer

Frequently thinks he is sick. Complains regularly of peculiar pains or bodily dysfunctions. Discusses such topics, frequently revealing a preoccupation with his complaints.

Low Scorer

Is without excessive bodily concern or preoccupation with physical complaints. Absenteeism due to ill health likely to be below average.

## Depression

High Scorer

Inclines to be down-hearted and show extreme despondency; considers himself to be inadequate; may be listless, remote and preoccupied; looks at his future pessimistically.

Low Scorer

Reports a usual feeling of confidence, cheerfulness, and persistence, even when experiencing disappointment. Has an optimistic attitude about his future.

## Denial

High Scorer

Lacks insight into his feelings and the causes of his behavior. Avoids unpleasant, exciting, or violent topics. Relatively unresponsive emotionally.

Low Scorer

Accepts his feelings as part of himself; not afraid to discuss unpleasant topics. Can answer questions about himself frankly; avoids impression management. Shows normal affect.

## Interpersonal Problems

High Scorer

Is often extremely annoyed by little inconveniences, frustrations or disappointments; will frequently be uncooperative, disobedient, and resistant when faced with rules and regulations; reacts against discipline and criticism.

Low Scorer

Experiences less than average irritation from noise, changes in routine, disappointment and mistakes of others; respects authority and prefers clearly defined rules and regulations; cooperates fully with leadership and readily accepts criticism from others.

---



TABLE 1-Continued

---

### Social Deviation

High Scorer

Express attitudes markedly different from common social codes; is prone to depart from the truth and behave in an unethical and untrustworthy manner; feels little or no guilt.

Low Scorer

Ordinarily displays ethical and socially responsible attitudes and behavior; reports a sense of obligation toward society and its laws.

### Persecutory Ideas

High Scorer

Believes that certain people are against him and are trying to make his life difficult and unpleasant. Inclined to brood.

Low Scorer

Trusts others and doesn't feel threatened. Accepts responsibility for the events in his life and doesn't attribute maliciousness to others

### Anxiety

High Scorer

Easily scared. Little things, even an idea, can throw him into a frenzy of anxiety. Afraid of novelty and of the possibility of physical or interpersonal danger.

Low Scorer

Remains calm and unruffled even when confronted by unexpected occurrences. Maintains self control even in a crisis situation.

### Thinking Disorder

High Scorer

Is markedly confused, distractable and disorganized. Cannot remember even simple things from day to day. Reports that he feels he is living in a dream-like world, that people appear different to him and that he feels different from them.

Low Scorer

Appears to be even-tempered and level-headed; carefully considers the future before acting; generally has the patience to cope with a lengthy and tedious task.

### Impulse Expression

High Scorer

Lacks ability to think beyond the present and to consider the consequences of his actions; behavior is risky, reckless, and irresponsible.

Low Scorer

Even-tempered and level-headed; carefully considers the future before acting; patient.

---

TABLE 1-Continued

---

Social Introversion

High Scorer

Avoids people generally. Has few friends and doesn't say much to those he has. Seems to be uncomfortable when around others. Prefers asocial activities.

Low Scorer

Enjoys company. Likes to talk and knows many people. Spends much of his time with others.

Self Depreciation

High Scorer

Degrades himself as being worthless, unpleasant, and undeserving. Refuses credit for any accomplishment.

Low Scorer

Manifests a high degree of self-assurance in dealings with others. Confident; believes in his own ability to accomplish things.

Deviation

High Scorer

Displays behavior patterns very different from most people's. Admits to unusual and pathological characteristics.

Low Scorer

Generally shows behavior patterns similar to those of a majority of people. Tends to be free from unusual symptoms and modes of thought.

---

description of each factor is presented in Table 1. In addition, the items making up each scale are presented in Appendix A. Presently, there have been no reported studies assessing the reliability or validity of this instrument.

Procedure

To assess the reliability of the BPI, the instrument was administered to the URI sample twice with a four week interval between

testings. Students received Jackson's test instructions only. Once completed, inventories from both administrations were scored and distribution statistics determined. Kuder-Richardson formula 20 coefficients were then calculated for each of the 12 scales based on the first administration of the inventory. In addition, the Pearson product-moment intercorrelation matrix for each testing was determined and scale test-retest coefficients calculated.

OCRI students participating in the dissimulation study were administered the BPI under one of three conditions: (1) students assigned to the first condition ( $n = 124$ ) were given Jackson's standard instructions, (2) students assigned to the second condition ( $n = 50$ ) were given instructions to "fake good adjustment," and finally, (3) students assigned to the third condition ( $n = 50$ ) were given instructions to "fake maladjustment." Faking and standard instructions are presented in Appendix B. Assignment to each condition was random.

Once the data were collected, the inventories were scored and distribution statistics determined for each condition. Multiple discriminant analysis was performed to determine: (1) the extent to which the BPI could be faked, (2) the relative susceptibility of each scale, and (3) the minimum number of scales needed to explain the group differences. The standard instructions data were further analyzed to determine scale internal consistency (KR-20) and inter-scale correlations.

## RESULTS

### Reliability of the BPI Scales

The prediction that the BPI scales would exhibit adequate internal consistency and temporal stability (i.e. estimates  $\geq .70$ ) was supported for some scales but not for others. Means, medians, and standard deviations of the BPI scales for both the URI (test 1) and OCRI (standard instructions) samples are presented in Table 2. Means for the two samples are plotted in Figure 1. Internal consistency coefficients (KR-20) are presented in Table 3. These coefficients are in the moderate to high moderate range. URI coefficients ranged from .58 (Denial) to .79 (Depression) while OCRI coefficients ranged from .50 (Deviation) to .82 (Anxiety). Scales exhibiting adequate internal consistency ( $\geq .70$ ) were Hypochondriasis (URI = .76; OCRI = .77), Depression (URI = .79; OCRI = .78), Anxiety (URI = .77; OCRI = .82), Impulse Expression (URI = .75; OCRI = .71), and Social Introversion (URI = .74; OCRI = .73)

Table 2 presents the distribution statistics for test 1 and test 2. The test-retest reliability coefficients for the 12 scales are presented in Table 3. These coefficients range from .62 (Self Depreciation) to .85 (Depression). Three coefficients were below .70 (Denial, Thinking Disorder, and Self Depreciation) while four scales yielded coefficients greater than .80 (Depression, Interpersonal

TABLE 2

MEANS, MEDIANS, AND STANDARD DEVIATIONS OF BPI  
 SCALES FOR URI( TEST 1), URI( TEST 2), AND CCRI  
 (STANDARD INSTRUCTIONS) SAMPLES

	URI (N=168)						CCRI (N=124)					
	Test 1			Test 2			Stand. Instructions					
	Mean	Med.	SD	Mean	Med.	SD	Mean	Med.	SD	Mean	Med.	SD
Hypochondriasis	4.64	4.07	3.39	3.34	2.59	3.29	4.81	3.86	3.51	4.81	3.86	3.51
Depression	3.01	2.13	2.84	2.41	1.27	3.21	2.93	2.04	3.04	2.93	2.04	3.04
Denial	6.20	6.07	2.73	6.73	6.68	2.88	5.19	5.07	3.09	5.19	5.07	3.09
Interpersonal Problems	9.36	9.40	3.45	8.80	8.98	3.61	10.35	10.27	3.27	10.35	10.27	3.27
Social Deviation	5.53	4.72	3.34	5.04	4.32	3.57	7.23	6.97	3.67	7.23	6.97	3.67
Persecutory Ideas	5.58	5.02	3.11	4.58	4.07	3.02	5.72	5.80	3.01	5.72	5.80	3.01
Anxiety	8.02	8.06	3.86	6.59	6.37	3.55	7.86	7.17	4.17	7.86	7.17	4.17
Thinking Disorder	5.21	4.75	2.83	4.12	3.46	3.03	5.12	4.98	2.94	5.12	4.98	2.94
Impulse Expression	9.19	8.80	3.97	8.34	7.90	4.32	10.26	10.50	3.76	10.26	10.50	3.76
Social Introversion	4.11	3.41	3.16	3.67	2.43	3.59	3.99	3.03	3.32	3.99	3.03	3.32
Self Depreciation	1.88	1.26	2.15	1.55	.93	2.01	1.87	1.34	1.98	1.87	1.34	1.98
Deviation	3.64	3.50	2.16	2.94	2.85	2.10	3.79	3.55	2.10	3.79	3.55	2.10

Note: Possible range of scores for each scale is 0-20.

Figure 1. URI and CCRI mean scale scores.

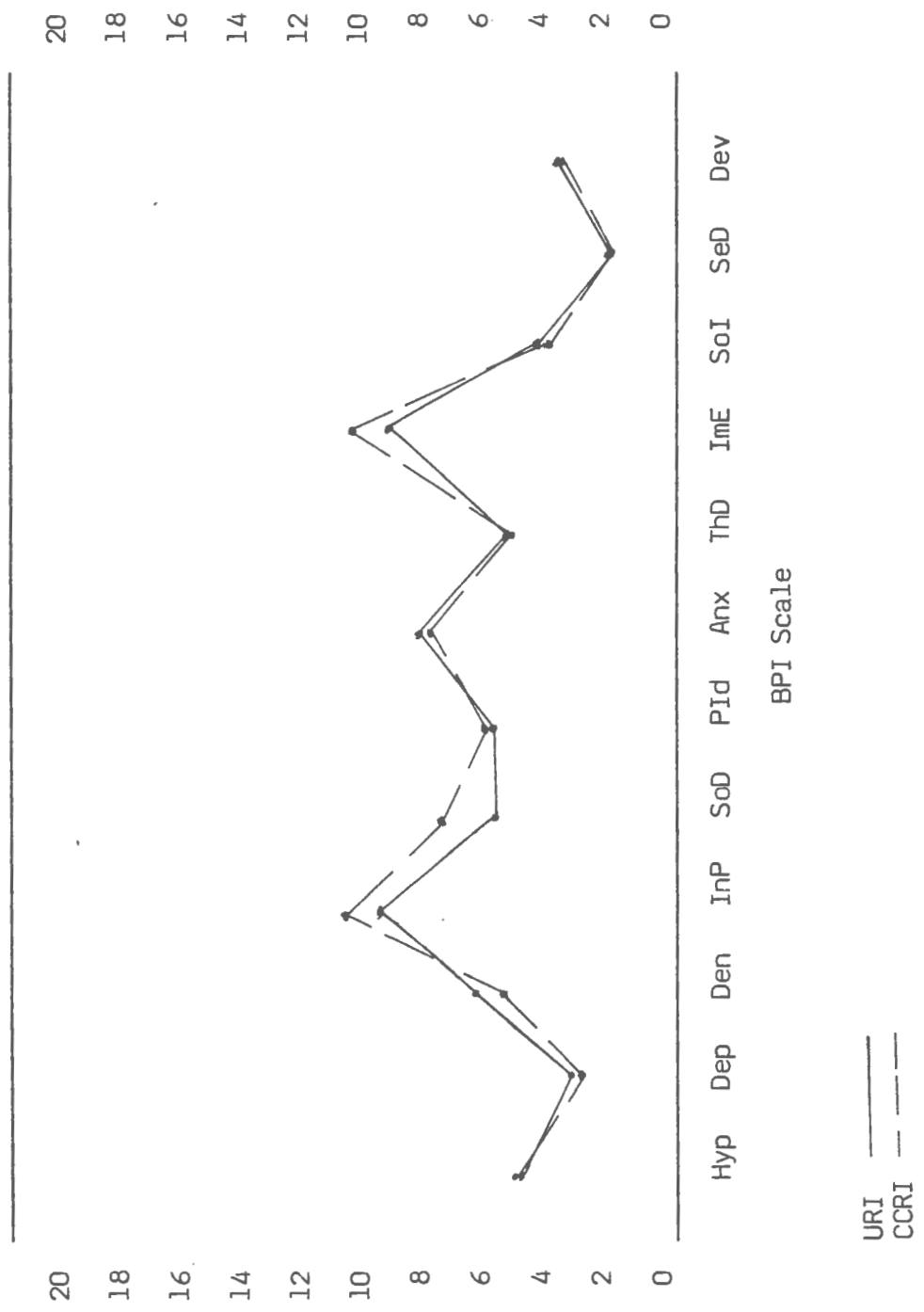


TABLE 3  
SUMMARY OF BPI RELIABILITY ANALYSIS

	KR-20		$r_{12}$
	CCRI Stand. Instructions	URI Test 1	URI Test-Retest
Hypochondriasis	77	76	74
Depression	78	79	85
Anxiety	82	77	75
Impulse Expression	71	75	78
Social Introversion	73	74	82
Interpersonal Problems	63	67	82
Social Deviation	63	73	81
Persecutory Ideas	64	72	71
Deviation	50	59	70
Denial	67	58	67
Thinking Disorder	69	67	64
Self Depreciation	63	64	62

Note: Decimals omitted.

Problems, Social Deviation, and Social Introversion).

The results of the reliability analysis presented in Table 3 reveal that five scales; the Hypochondriasis scale, the Depression scale, the Anxiety scale, the Impulse Expression scale, and the Social Introversion scale, exhibit internal consistency and stability coefficients greater than .70.



### Faking Susceptibility of the BPI Scales

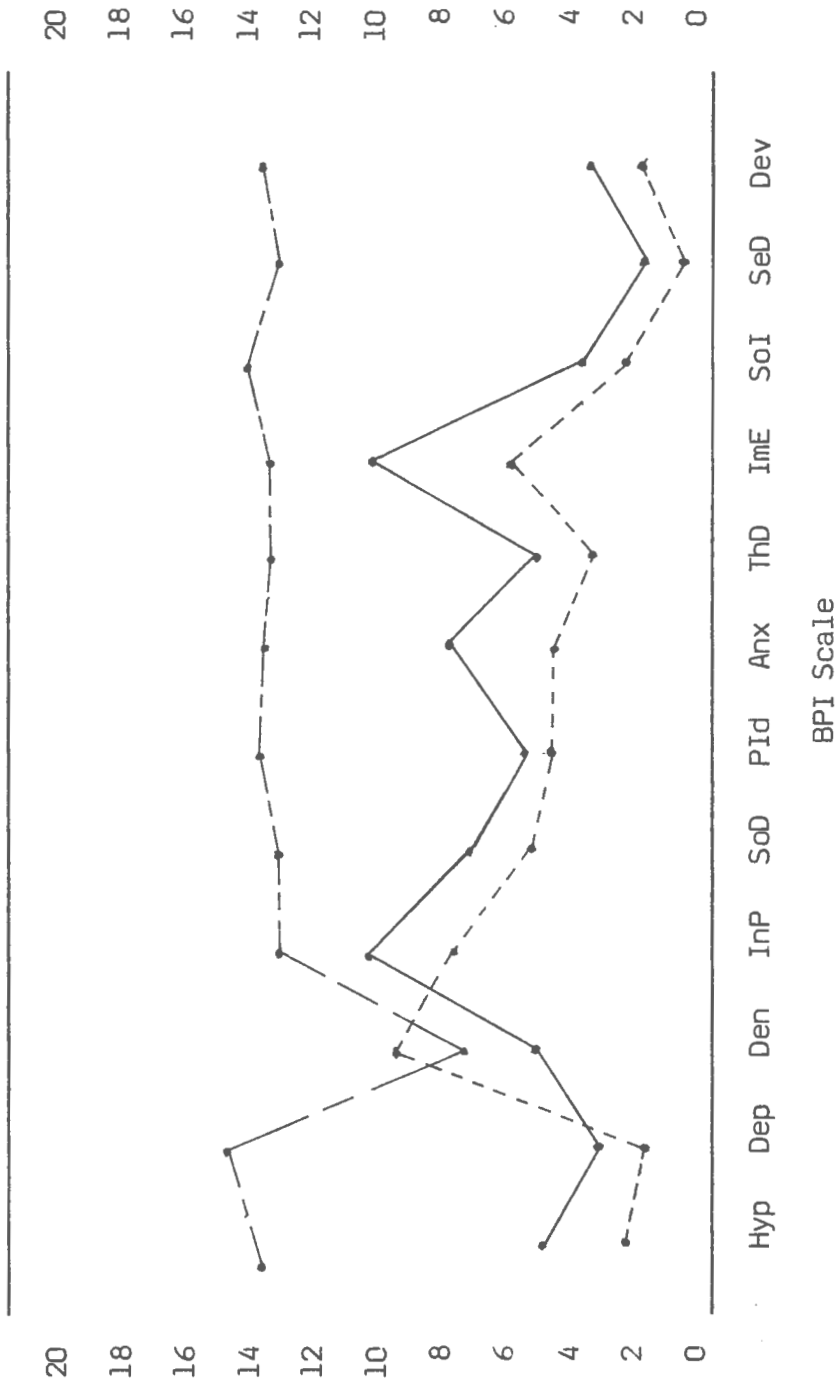
Results generally supported the hypothesis that the BPI scales could be faked. BPI scale means and standard deviations for the standard instructions, "fake good adjustment", and "fake maladjustment" groups are presented in Table 4. Univariate F's for each scale are presented in Table 5. Scale means for the three groups are plotted in Figure 2. All univariate F's are statistically significant ( $df = 2,221$ ,  $p < .001$ ). In order to determine the specific nature of the differences between the three groups, group means on each scale were compared and differences tested for significance using the Turkey procedure (Hindle et al., 1979). The "fake good adjustment" group means were significantly lower than the standard instructions group means on the Hypochondriasis scale ( $p < .01$ ), the Depression scale ( $p < .05$ ), the Interpersonal Problems scale ( $p < .01$ ), the Social Deviation scale ( $p < .01$ ), the Anxiety scale ( $p < .01$ ), the Thinking Disorder scale ( $p < .05$ ), the Impulse Expression scale ( $p < .01$ ), the Social Introversion scale ( $p < .05$ ), and the Deviation scale ( $p < .01$ ). The "fake good adjustment" group scored significantly higher than both the standard instructions group ( $p < .01$ ), and the "fake maladjustment" group ( $p < .01$ ) on the Denial scale. Differences between the "fake good adjustment" group and the standard instructions group on the Persecutory Ideas scale and the Self Depreciation scale failed to reach statistical significance ( $p > .05$ ). Thus, the prediction that the "fake good adjustment" group would score significantly lower than the standard instructions group on the BPI scales was supported with respect to every scale except the Denial

TABLE 4

MEANS AND STANDARD DEVIATIONS FOR STANDARD INSTRUCTIONS,  
FAKE GOOD ADJUSTMENT, AND FAKE MALADJUSTMENT GROUPS

Scale	Instructions					
	Standard		Fake Good		Fake Maladjust	
	Mean	SD	Mean	SD	Mean	SD
Hypochondriasis	4.81	3.51	2.32	2.06	13.56	4.40
Depression	2.93	3.04	1.40	1.65	14.50	5.73
Denial	5.19	3.09	9.36	4.06	7.08	3.38
Interpersonal Problems	10.35	3.23	7.50	3.48	13.04	4.68
Social Deviation	7.23	3.67	4.92	3.85	13.02	4.55
Persecutory Ideas	5.72	3.01	4.48	2.10	13.94	4.68
Anxiety	7.86	4.17	4.24	3.19	13.78	3.94
Thinking Disorder	5.12	2.94	3.74	2.12	13.52	4.41
Impulse Expression	10.26	3.76	5.96	3.60	13.50	4.56
Social Introversion	3.99	3.32	2.18	2.72	14.06	5.22
Self Depreciation	1.87	1.98	.68	1.20	13.18	5.84
Deviation	3.79	2.10	1.92	1.51	13.58	4.29

Figure 2. Mean scores on the twelve BPI scales for the standard instructions, fake good adjustment, and fake maladjustment groups.



Instructions

- Standard
- Fake Good
- Fake Maladjustment

TABLE 5

## EFFECTS OF INSTRUCTIONS ON INDIVIDUAL BPI SCALES

Scale	r	$r^2$ (1- $\Lambda$ )	Univariate F (d.f.= 2 and 221)
Deviation	.85	.73	303.32
Self Depreciation	.84	.71	264.93
Depression	.81	.66	218.12
Social Introversion	.77	.59	161.94
Hypochondriasis	.76	.58	153.41
Thinking Disorder	.76	.58	152.04
Persecutory Ideas	.73	.53	122.35
Anxiety	.64	.41	76.50
Social Deviation	.59	.35	58.85
Impulse Expression	.55	.30	46.80
Interpersonal Problems	.46	.21	28.71
Denial	.45	.20	27.85

Note: BPI scales are ranked. F's and r's are statistically significant ( $p < .001$ ).

scale, the Persecutory Ideas scale, and the Self Depreciation scale. The second prediction, however, was supported in every case. The "fake maladjustment" group scored significantly higher than the standard instructions group on every scale ( $p < .01$ ). Turkey test results are summarized in Appendix C.

The r's and corresponding  $r^2$ 's reported in Table 5 indicate the relative sensitivity of the BPI scales to dissimulation effects. Each

$r$  represents the correlation between scores on a particular scale and group membership. As expected, faking susceptibility varied from scale to scale. Correlation coefficients ranged from .45 (Denial) to .85 (Deviation). Corresponding  $r^2$ 's ranged from .20 (Denial) to .73 (Deviation).

In order to determine the minimum number of scales needed to account for the effects of dissimulation, a stepwise discriminant analysis was performed on the data. A summary of this analysis is presented in Table 6. Nine of the twelve BPI scales were selected before the addition to Rao's  $V$  became nonsignificant. The nine scales contributing to the high degree of separation between the three groups are Deviation, Self Depreciation, Denial, Social Introversion, Thinking Disorder, Hypochondriasis, Anxiety, Persecutory Ideas, and Impulse Expression. Scales failing to significantly contribute to group separation were Depression, Interpersonal Problems, and Social Deviation. Prediction results are presented in Table 7. Using the two significant discriminant functions it was possible to correctly classify 85.27% of the cases into their known group. This further indicates that instructions to fake or to respond normally produced great differences in group BPI profiles.

An inspection of the Wilks' Lambda coefficients (Table 6) at each step of the analysis revealed an interesting pattern concerning the relative contributions of each scale. The  $r^2$  (equal to  $1 - \Lambda$ ) between the nine scales and group membership was .871, indicating the extent of differences between groups achieved by simply manipulating the motivation to fake. After step 3,  $r^2$  was equal to .835. Thus, the

TABLE 6

SUMMARY OF STEPWISE DISCRIMINANT ANALYSIS:  
VARIABLE SELECTION

Step Number	Variable Entered	F	Wilks' Lambda	Rao's V	Change in Rao's V			
1	(V12)Deviation	303.32	.267	606.64	606.64			
2	(V11)Self Depreciation	26.24	.216	794.17	187.53			
3	(V 3)Denial	33.78	.165	902.53	108.36			
4	(V10)Social Introversion	7.10	.155	964.78	62.25			
5	(V 8)Thinking Disorder	4.20	.149	1007.51	42.73			
6	(V 1)Hypochondriasis	3.25	.145	1028.83	21.33			
7	(V 7)Anxiety	3.00	.141	1044.64	15.81			
8	(V 6)Persecutory Ideas	3.74	.136	1063.52	18.88			
9	(V 9)Impulse Expression	5.86	.129	1083.68	20.16			
	(V 2)Depression	.63	Insufficient F (	1.00)				
	(V 4)Interpersonal Problems	.25	Insufficient F (	1.00)				
	(V 5)Social Deviation	.89	Insufficient F (	1.00)				
Discriminant Function	Eigenvalue	Relative Percentage	Canonical Correlation	Functions Derived	Wilks' Lambda	Chi Square	D.F.	Sign.
1	4.489	91.55	.904	0	.1288	444.72	18	p .001
2	.414	8.45	.541	1	.7071	75.21	8	p .001

TABLE 7  
PREDICTION RESULTS

Actual Group Membership	Cases	Predicted Group Membership		
		1	2	3
1 Standard Instructions	124	103 83.1%	20 16.1%	1 .8%
2 Fake Good Adjustment	50	8 16%	42 84%	0 0%
3 Fake Maladjustment	50	2 4%	2 4%	46 92%

Percent of "Grouped" cases correctly classified: 85.27%

remaining six scales only increased  $r^2$  by .036 and were statistically, but not practically significant. Most of the information necessary to classify individuals into their respective groups was contained in the Deviation scale, the Self Depreciation scale, and the Denial scale. Restricting the multiple discriminant analysis to a maximum of three steps, the data were reanalyzed. A summary of this analysis is presented in Table 8. The three discriminating variables produced a final Wilks' Lambda of .165, indicating near equivalent separation compared to the first analysis. Two discriminant functions were found to be statistically significant with canonical correlations of .890 and .452 respectively. The first discriminant function accounted for



93.7 percent of the separation achieved between the three groups.

The group centroids representing the mean discriminant scores for each group on the two functions or dimensions are reported in Table 9, and plotted in Figure 3. The centroids summarize the group locations in the two dimensional space defined by the discriminant functions. The first function serves to distinguish the "fake maladjustment" group from the other two, while the second function primarily differentiates the "fake good adjustment" group from the others. Further evidence relating to group differences is evident in the plot of cases presented in Appendix D. The asterisks represent the group centroids and the numbers represent cases corresponding to groups 1 (standard instructions), 2 (fake good adjustment), and 3 (fake makadjustment).

The relative contributions of the three discriminatng variables to the two significant functions is presented in Table 10. The first dimension is most highly weighted with the Deviation scale, followed by the Self Depreciation scale. Both scales are weighted in a negative direction, indicating that high scores on Deviation and Self Depreciation result in low scores on Dimension I, and vice versa. The "fake maladjustment" group scored in the negative direction on this demension while the standard instructions group and the "fake good adjustment" group scored in the positive direction (Figure 3).

The second dimension is highly weighted, in a positive directon, with only the Denial scale. Those who score high on the Denial scale will tend to also score high on Dimension II, while those who score low on Denial will also tend to score low on the second dimension. The

TABLE 8

SUMMARY OF STEPWISE DISCRIMINANT ANALYSIS BASED ON  
THE DEVIATION, SELF DEPRECIATION, AND DENIAL SCALES

Step Number	Variable Entered	F	Wilks' Lambda	Rao's V	Change in Rao's V
1	(V12)Deviation	303.32	.267	606.64	606.64
2	(V11)Self Depreciation	26.24	.216	794.17	187.53
3	(V 3)Denial	33.78	.165	902.53	108.36

Discriminant Function	Eigenvalue	Relative Percentage	Canonical Correlation	Functions Derived	Wilks' Lambda	Chi Square	D.F.	Sign.
1	3.826	93.70	.890	0	.165	396.70	6	p .001
2	.258	6.30	.452	1	.795	50.40	2	p .001

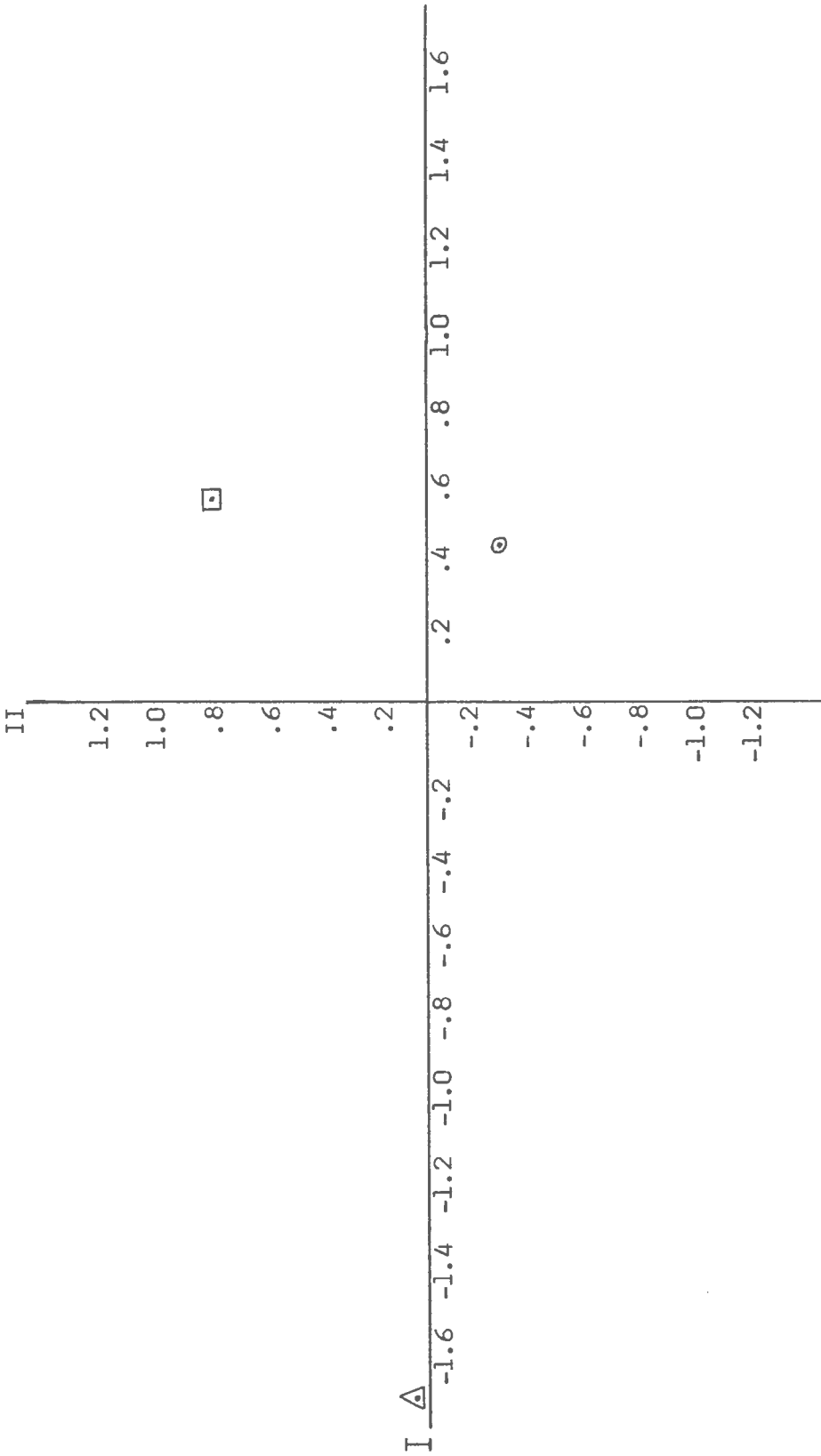
TABLE 9  
CENTROIDS OF GROUPS IN REDUCED SPACE

Group	Function I	Function II
1 Standard Instructions	.430	-.342
2 Fake Good Adjustment	.587	.788
3 Fake Maladjustment	-1.653	.059

TABLE 10  
STANDARDIZED DISCRIMINANT FUNCTION COEFFICIENTS

Variable	Function I	Function II
v3 Denial	-.137	.968
v11 Self Depreciation	-.458	.256
v12 Deviation	-.587	-.304

Figure 3. Discriminant function centroids for the standard instructions, fake good adjustment, and fake maladjustment groups.



Instructions

- Standard 
- Fake Good 
- Fake Maladjustment 

"fake good adjustment" group scored high on this dimension while the "fake maladjustment" and standard instructions groups scored low.

Finally, the prediction results are presented in Table 11. Using the two significant discriminant functions, it was possible to correctly classify 78.17% of the cases into their respective group. It was easier to predict (or detect) a person's group membership if they faked maladjustment (88%) rather than good adjustment (70%), or did not fake at all (77.4%).

In summary, it appears that three scales - the Deviation scale, the Self Depreciation scale, and the Denial scale, can successfully account for most of the group differences due to faking.

#### Discriminant Validity of the BPI Scales

Correlations between scales were computed from the URI test 1, URI test 2, and CCRI standard instructions data and are presented in Tables 12 and 13. With respect to the prediction of near zero inter-scale correlations the results are mixed.

Correlations between scales were generally consistent across URI test administrations (Table 12). These correlations are in the low positive to moderate positive range with the exception of scale 3. Correlations for this scale, although in the same range, are consistently negative in direction. Thus, with respect to the URI data the prediction of near zero correlations between scales was not supported.

TABLE 11  
PREDICTION RESULTS BASED ON SCORES FROM  
THE DEVIATION, SELF DEPRECIATION, AND  
THE DENIAL SCALES

Actual Group	No. of Cases	Predicted Group Membership		
		Group 1	Group 2	Group 3
Group 1 Stand. Instructions	124	96 77.4%	27 21.8%	1 .8%
Group 2 Fake Good Adjustment	50	15 30%	35 70%	0 0%
Group 3 Fake Maladjustment	50	3 6%	3 6%	44 88%

Note: Percent of "Grouped" cases correctly classified = 78.13.

Results based on the CCRI data generally supported the prediction of near zero intercorrelations (Table 13.) Correlations between scales tend to be in the low range with a large number of intercorrelations below .20. A few intercorrelations were in the moderate to high moderate range. Specifically correlations between Hypochondriasis and Anxiety (.62), Hypochondriasis and Deviation (.46), Depression and Self Depreciation (.53), Persecutory Ideas and Deviation (.44), and Anxiety and Self Depreciation (.42) were found to be unsatisfactorily high.

TABLE 13

COMMUNITY COLLEGE INTERCORRELATION MATRIX  
STANDARD INSTRUCTIONS DATA

Scale	1	2	3	4	5	6	7	8	9	10	11	12
1		25	06	-10	-10	26	62	32	05	09	30	46
2			03	05	-05	27	34	11	02	39	53	21
3				-18	03	00	-12	00	-23	07	05	-04
4					30	09	04	-04	29	23	00	06
5						20	-10	-07	27	-07	-07	22
6							39	39	13	15	29	44
7								34	08	13	42	31
8									18	03	17	36
9										-16	02	37
10											38	04
11												35
12												

Note: Decimals omitted.



TABLE 12

## UNIVERSITY INTERCORRELATION MATRIX

Scale	1	2	3	4	5	6	7	8	9	10	11	12
1	-	42	-27	32	30	49	50	46	43	26	27	56
2	46	-	-26	29	30	45	38	34	32	41	42	47
3	-29	-21	-	-29	-15	-29	-42	-20	-35	-05	-17	-26
4	41	36	-40	-	46	38	24	23	35	24	23	25
5	28	38	-20	51	-	42	06	35	25	27	23	33
6	49	61	-30	48	52	-	54	49	35	28	37	55
7	47	35	-37	37	20	55	-	38	33	21	34	45
8	47	29	-28	30	37	47	39	-	43	24	27	68
9	41	38	-36	38	40	40	39	37	-	13	25	56
10	37	51	-12	24	27	38	21	20	24	-	41	31
11	28	56	-23	16	24	39	30	18	34	54	-	36
12	59	48	-29	37	40	55	50	60	59	27	32	-

Note: First Administration values are above the diagonal and Second Administration values are below the diagonal. Decimals have been omitted.

## DISCUSSION

Five of the twelve BPI scales demonstrated adequate reliability (coefficients  $\geq .70$ ). These five scales: Hypochondriasis, Depression, Anxiety, Impulse Expression, and Social Introversion, show the greatest promise. An additional four scales: Interpersonal Problems, Social Deviation, Persecutory Ideas, and Deviation, demonstrated adequate temporal stability but inadequate internal consistency. The least internally consistent scale in the inventory was the Deviation scale with forty to fifty percent measurement error across samples. Finally, three scales failed to meet both the internal consistency and temporal stability criterion. These scales are Denial, Thinking Disorder, and Self Depreciation.

There are a number of possible explanations for these results. First, since the greatest amount of error seems to be associated with the internal consistency estimates, it may be that many of the scales are factorally complex. If this is the case, the KR-20 coefficients would be expected to be low, but the stability coefficients would be relatively unaffected (Edwards, 1970). Jackson (Note 1) maintains that each scale represents a single independent factor. These results, however, suggest that this may not be the case. Further research should address this issue.

Second, an inspection of Table 2 reveals that with the exception of the Interpersonal Problems scale, the Anxiety scale, and the

Impulse Expression scale, the remaining scales are positively skewed. Considering the nature and purpose of the inventory this would be expected when "normal" populations are studied. This restricted variability, however, would tend to reduce the size of the reliability estimates. It is interesting to note that two of the three normally distributed scales have among the highest reliability coefficients (Anxiety and Impulse Expression) and the third scale (Interpersonal Problems), while yielding internal consistency coefficients less than .70 (URI = .67; OCRI = .63), exhibited a high stability coefficient ( $r = .82$ ). Further, we would expect that the BPI scales would exhibit greater variability when tested in a clinical population, and therefore possibly yield higher reliability coefficients. This, of course, would be important since the BPI was designed primarily to be used with such populations.

One possible solution to the restricted variability problem would be to change the item format from a true/false option to a multi-point option. Multi-point item scales tend to be more variable, more continuous, and more normally distributed (Comrey, 1978). More importantly, recent research suggests that changing from a true/false format to a multi-point format can effectively increase item and scale reliability (Velicer and Stevenson, 1978).

A final possible explanation for the less than adequate reliability coefficients concerns three of the BPI scales. The Deviation, Denial, and the Self Depreciation scale appear similar to some validity scales generally found in the literature. An inspection of the items making up the Deviation and Denial scales (Appendix A)

reveals that the former resembles the F scale of the MMPI (Hathaway and McKinley, 1943) while the latter resembles the Lie and K scale of the MMPI and the Lie scale found in the Eysenck Personality Questionnaire (Eysenck and Eysenck, 1975). In addition, Jackson (Note 1) has suggested that the Self Depreciation scale measures one component of desirability. The results from our faking study indicate that the Deviation scale, the Self Depreciation scale, and the Denial scale could be successfully used to detect faking. Since validity scales typically generate lower reliability coefficients due to minimum variation among the observed scores (Eysenck and Eysenck, 1975), we would expect lower reliabilities from these three scales. It remains to be demonstrated, however, whether these three BPI scales would operate similarly when clinical populations are sampled.

How does the reliability of the BPI scales compare with the reliability of the MMPI scales? MMPI corrected split-half reliabilities and test-retest coefficients are reported in Table 15. These coefficients are based on data collected from 97 college students (Gilliland and Colgin, 1951). Even considering that KR-20 estimates generally are more conservative than corrected split-half estimates, the BPI coefficients are on the average higher than the MMPI coefficients. The MMPI corrected split-half reliabilities ranged from  $-.50$  to  $.81$  with five of the nine coefficients less than  $.60$ . In contrast, the BPI internal consistency estimates ranged from  $.50$  to  $.82$  in the CCRI sample, and  $.58$  to  $.79$  in the URI sample. When these results are averaged across samples, only one of the twelve coefficients is less than  $.60$ . Note that the BPI stability

TABLE 14  
MMPI RELIABILITY COEFFICIENTS

Scale	Test-Retest	Split-Half
	N = 89	N = 97
Hs	.29	.78
D	.81	.58
Hy	.39	.47
Pd	.79	.46
Mf	.71	.73
Pa	.67	-.65
Pt	.70	.81
Sc	.55	.79
Ma	.56	.55

From Gilliland and Colgin, 1951

coefficients are also generally higher than the stability coefficients reported for the MMPI in the Gilliland and Colgin (1951) study. Although the test-retest coefficients reported in the manual (Hathaway and McKinley, 1967, p. 8) are generally of the same magnitude as the BPI coefficients, the interval between testing was only one week in the MMPI study, but four weeks in the BPI study. Thus, the reliability data reported here suggests that the BPI scales are generally more reliable than the MMPI scales.

#### Faking Susceptibility of the BPI Scales

It appears that the Basic Personality Inventory scales, like other similar self-report measures, can be rather easily faked. College students had little trouble making themselves appear better adjusted or even maladjusted. The ease of faking, however, depended to some extent on the direction of faking, and the particular scale involved.

Our results indicate that it is easier for "normals" to fake in a maladjusted direction on the BPI. The differences found between the "fake maladjustment" group and the standard instructions group in terms of profile elevation were much greater than differences found between the "fake good adjustment" group and the "standard instructions" group (Table 6 and Figure 2). The discriminant analysis results supported this conclusion. Prediction results presented in Table 11 indicate that it was generally easier to predict a person's group membership if they faked maladjustment (88%) rather than good adjustment (70%) or did not fake at all (77.4%). Furthermore, the plot of individual cases (Appendix D) indicates more overlap between

the standard instructions group and the "fake good adjustment" group, than between the "fake maladjustment" group and the others.

The fact that faking maladjustment produced greater change in profile elevation is related in part to the rather low mean scores on the BPI produced by normals in general (Table 2). The "fake good adjustment" group could lower their scores only minimally on most scales while the "fake maladjustment" group had considerable room to vary in the elevated or maladjusted direction. This probably also best explains why two scales, the Persecutory Ideas scale and the Self Depreciation scale, could not be faked in the more adjusted direction.

One interesting finding was that both faking groups scored significantly higher than the standard instructions group on the Denial scale. The "fake good adjustment" group scored the highest of the three. This makes sense considering that this scale appears similar to some established validity scales used in other inventories. Specifically, the L and K scales of the MMPI (Hathaway and McKinley, 1967) and the Lie scale of the Eysenck Personality Questionnaire (Eysenck and Eysenck, 1975). Both the L scale and the Lie scale were designed to detect faking in a desirable direction. Thus, we would expect the "fake good adjustment" group to score high on the BPI's Denial Scale. Generally, these people are denying that they have even minor faults, or experience any negative emotions. What is surprising, however, is that the "fake maladjustment" group also scored significantly higher on this scale. Perhaps, they interpreted denial of such behaviors or experiences as pathological? Further research should address this question. Possibly the Denial

scale could be used to detect faking in general. This would only be possible, however, if future research demonstrated that pathological groups generally tend to score lower on this scale. Without this evidence one would not know if a person was faking, or if that person actually possessed the pathology indicated by the scale.

Faking susceptibility generally varied from scale to scale.  $r$ 's presented in Table 5 ranged from .20 (Denial) to .73 (Deviation). These results indicate first that no scale was entirely resistant to dissimulation, and second that some scales were extremely sensitive to response distortion; notably the Deviation scale, the Self Depreciation scale, and the Depression scale. However, even the least susceptible scale, Denial, correlated .45 with group membership. Further, it was the Denial scale along with Deviation and Self Depreciation that contributed the most to group separation in the discriminant analysis. This is so because although the univariate analysis demonstrated that the Denial scale was least susceptible to faking - what it did have to offer to group separation was almost entirely unique to this scale. Thus, the Denial scale rather than some other scale offering only redundant information was selected as the third best predictor.

Finally, it appears that faking can be significantly predicted from information contained in three BPI scales. These three scales; Deviation, Self Depreciation, and Denial, may potentially be used as validity scales. As noted previously, this is further suggested by the fact that these scales appear similar to some recognized and already established validity scales used in other major inventories.



Profiles with high Deviation, Self Depreciation, and Denial scores suggest faking in a pathological direction. These persons freely admit to unusual symptoms and modes of thought, tend to be self depreciating, and report being relatively unresponsive emotionally. Profiles presenting suppressed Deviation and Self Depreciation scores along with an elevated Denial score suggest faking in a desirable, more adjusted direction. Persons presenting this type of profile report being free from symptoms and unusual modes of thought, high in self-confidence, admit to few if any faults, and report experiencing few if any negative emotions.

#### Discriminant Validity of the BPI Scales

Although we were able to provide some initial evidence regarding the discriminant validity of the BPI scales, our results were mixed. With respect to the CCRI data (Table 13), there appears to be strong and clear evidence of discriminant validity. Most of the scale intercorrelations are in the low range suggesting little redundancy among the scales. This pattern, however, disappears when the URI scale intercorrelations are examined (Table 12). In contrast to the CCRI coefficients, most of the URI scale intercorrelations are unsatisfactorily high indicating considerable redundancy among the scales.

Our results may be due to the nature of the populations studied. In any case, the discriminant validity of the BPI scales needs to be assessed further, especially in the context of a clinical population.

## Conclusion

The reliability of the BPI appears to be generally superior to that of the MMPI. This involves scale reliabilities based on internal consistency and stability estimates. Further, we have reason to believe that these coefficients would be even higher in clinical populations.

The BPI scales can be easily faked, both in a "more adjusted" and maladjusted" direction. Our results further indicate that three scales - the Deviation scale, the Self Depreciation scale, and the Denial scale can be effectively used as "fake detectors", or validity scales. Certain profiles based on these scales were shown to clearly indicate faking on the part of the respondent.

Finally, the results concerning the discriminant validity of the BPI scales were mixed. This warrants concern generally but especially since the observed scale intercorrelations, being based on normal population data, were most likely conservative in nature.

Further research needs to be conducted examining the reliability, validity, and effects of dissimulation on the BPI scales when other relevant populations are studied, particularly clinical populations. Sex differences, age, social class, and racial differences also need to be ascertained. We suggest the first step would be to conduct a psychometric study involving a clinical population. Once accomplished a sequence of validity studies might be undertaken. Further, since Jackson (Note 1) maintains that the BPI measures twelve independent factors, an item and scale level factor analysis should be conducted to determine if this contention can be empirically supported.

Finally, based on our experience with Jackson's instrument, we believe that the Basic Personality Inventory (BPI) remains a promising alternative to the popular MMPI.

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APPENDIX A

Scale Items

## Hypochondriasis Scale (1)

True

- 13. Sometimes my legs feel so weak that I can't walk.
- 37. My stomach is easily upset.
- 61. I often have eye strain upon completing a day's work.
- 85. Whenever I am worried about something I get cramps.
- 109. I often have infections in odd parts of my body.
- 133. Sometimes I get so dizzy I can hardly stand up.
- 157. My skin is often red and inflamed.
- 181. I have poor blood circulation.
- 205. I get short of breath easily.
- 229. I often get headaches.

False

- 1. It's easy for me to keep physically healthy.
- 25. I am free of aches and pains.
- 49. I seldom have pains in odd parts of my body.
- 73. I do not suffer from backaches.
- 97. I seldom have a cough or sore throat.
- 121. I hardly ever get "splitting" headaches.
- 145. I generally feel warm enough.
- 169. My bones give me no trouble.
- 193. I have a good deal of energy.
- 127. I never feel faint.

## Depression Scale (2)

True

- 2. My present situation seems quite hopeless.
- 26. There is not much to be interested in anymore.
- 50. My days seem gloomy and dull.
- 74. Others always seem to enjoy life more than I.
- 98. Life holds no interest for me.
- 122. I often have trouble sleeping because I feel so sad.
- 146. I don't think things will ever get any better for me.
- 170. I am depressed most of the time.
- 194. I dislike almost everything I do.
- 218. I never seem to be really happy.

False

- 14. I rarely feel disappointed.
- 38. My future is bright.
- 62. I enjoy almost everything I do.
- 86. Each day has some event which holds my interest.
- 110. I live a very happy and satisfying life.
- 134. I always look forward to a new day.
- 158. I believe that life is worth living.
- 182. I am quite content with my life as it is now.
- 206. I am usually a happy person.
- 230. I believe that I shall have my share of good luck.

## Denial Scale (3)

True

- 15. Very few things excite me.
- 39. A promise of getting something for nothing would be no temptation to me.
- 63. I never cry or feel like crying.
- 87. I am careful not to think about anything evil.
- 111. I would not let being sick cause me to be cross with a loved one.
- 135. I have never cheated in any manner.
- 159. I dislike to think about personal problems.
- 183. I admit my errors without ever trying to hide anything.
- 207. I cannot think of any way in which I have failed a friend.
- 231. I always live up to my responsibilities.

False

- 3. I care about what other people think of me.
- 27. Some movies cause me to become quite emotional.
- 51. Sometimes I say bad things about my friends.
- 75. Some of my childhood memories are not very happy.
- 99. When I can, I try to get out of jobs I don't enjoy.
- 123. On some days nothing bothers me, but at other times I am quite touchy.
- 147. Occasionally I use my friends to my own advantage.
- 171. At times I thought one or both of my parents were being quite unfair to me.
- 195. Sometimes I go out of my way to avoid a person I dislike.
- 219. My feelings are sometimes hurt by loved ones.

## Interpersonal Problems Scale (4)

True

- 4. No one gets away with insulting me.
- 28. Sometimes I feel like smashing things.
- 52. If someone does something I don't like, I usually tell him about it.
- 76. People who are slow make me angry.
- 100. People who try to control me are in for a lot of trouble.
- 124. I like to run my own life without interference from anyone.
- 148. I dislike working for a person who is strick about rules.
- 172. If someone hurts me I don't forget it until I can get even.
- 196. I dislike being ordered around by anyone.
- 220. I get very irritated when someone disagrees with me.

False

- 16. I think rebellion is hardly ever necessary and right.
- 40. I get along quite well with bossy people.
- 64. I don't mind being told what to do.
- 88. My home life has been happy and free of fights.
- 112. I avoid quarrelling with others.
- 136. I would never intentionally hurt someone's feelings.
- 160. I take great pains to be tactful with other people.
- 184. I seldom feel like hitting someone.
- 208. I do not easily lose my patience with others.
- 232. Even if I feel a law is not fair, I still obey it.

## Social Deviation Scale (5)

True

- 5. I would enjoy betting on horses.
- 29. I have been in trouble with the law more than once.
- 53. I would enjoy cheating certain people.
- 77. I think that I could commit a crime and get away with it.
- 101. No one does anything for nothing.
- 125. People are always trying to trick you.
- 149. I admire a successful professional thief.
- 173. Someone is always getting away with something.
- 197. I would do just about anything for money.
- 221. I sometimes enjoy teasing animals.

False

- 17. I believe most people in the world are honest.
- 41. No matter how easy or safe it was, I would never steal money.
- 65. I think it is wrong to take advantage of someone of the opposite sex.
- 89. Most students do not cheat on tests.
- 113. The so-called happy life of gamblers has no appeal to me.
- 137. I was not regarded as a discipline problem by my school teachers.
- 161. There are many things I consider wrong and wouldn't do.
- 185. I would feel very guilty if I were caught doing something wrong.
- 209. Most people do what they can to help others.
- 233. Most people are decent and trustworthy.



## Persecutory Ideas Scale (6)

True

- 18. Someone has robbed me of my free will.
- 42. I can tell that my belongings have often been searched by someone.
- 66. I feel that I am in great danger from people who wish to harm me.
- 90. When people whisper, I feel they might be talking about me.
- 114. Though people try to be nice to me, I often have the feeling they do not like me.
- 138. I think a great deal about what people's actions really mean.
- 162. When I am around others, I often feel they are trying to keep me out of their group.
- 186. I never feel comfortable eating food cooked by others.
- 210. I'm usually the first person to be blamed if something goes wrong.
- 234. I would be much more successful if certain people were not against me.

False

- 6. No one is making things go wrong for me.
- 30. I seldom have the feeling that someone is trying to get the best of me.
- 54. I never have the feeling that someone wants to kill me.
- 78. I hardly ever feel that people are finding fault with me.
- 102. People usually do nice things for me without hidden reasons.
- 126. I never feel like a robot that someone else is directing.
- 150. I am sure that no one tells my friends mean things about me.
- 174. No one has a magical power to control me.
- 198. If I fail at something I have no one to blame but myself.
- 222. No one is trying to ruin my life.

## Anxiety Scale (7)

True

- 7. I become afraid when I must go anywhere alone.
- 31. Although I try very hard, I cannot keep from acting scared.
- 55. My own thoughts terrify me so much sometimes that I begin to feel faint.
- 79. I worry when a train or bus is late.
- 103. I start to feel afraid when I think about things that worry me.
- 127. Even when I know something cannot hurt me I sometimes feel afraid.
- 151. Little things often upset me.
- 175. My heart jumps and seems to stop when I am suprised.
- 199. I am usually to afraid to try anything new.
- 223. When I visit a strange place I become very upset.

False

- 19. Even at the end of a hard say, I remain relaxed and at ease.
- 43. I remain quite calm when things go wrong.
- 67. The things that other people do almost never get on my nerves.
- 91. I have the ability to concentrate without my mind wandering.
- 115. I generally feel quite comfortable when being introduced to strangers.
- 139. I never get so scared that I become physically ill.
- 163. I am able to remain calm even in unfamiliar places.
- 187. I usually remain calm even in emergencies.
- 211. Things that upset other people usually do not bother me.
- 235. I do not panic more quickly than most people.

## Thinking Disorder Scale (8)

True

- 20. A special voice follows me everywhere I go.
- 44. Sometimes my brain is full of colored lights.
- 68. Sometimes I hear voices which say things that only I understand.
- 92. I see bright pictures in my head when I don't want to.
- 116. At times I don't know whether a minute or an hour has gone by.
- 140. Sometimes my surroundings seem to change so that I am in a strange place.
- 164. I often have the feeling that imaginary things are happening to me.
- 188. I often see shadows and think they are people or animals.
- 212. I cannot separate my daydreams from the real world.
- 236. Many times I am surrounded by voices that seem to come from nowhere.

False

- 8. Faces of people I used to know never appear before me.
- 32. I never hear unknown voices warning me of danger.
- 56. Familiar things never seem "foggy" or far away to me.
- 80. My thoughts never seem so real that I think someone is talking to me.
- 104. I am able to do easy arithmetic problems without making mistakes.
- 128. I am not experiencing any unusual changes in the way things appear.
- 152. I can easily find my way around when I am left alone.
- 176. I usually know about what time it is.
- 200. I never see things that other people cannot see.
- 224. I can easily understand simple directions.

## Impulse Expression (9)

True

- 9. Many times I do things without thinking.
- 33. I usually do things in a hurry.
- 57. I may suddenly just get up and do something with no warning or reason.
- 81. I'm willing to do almost anything on the spur of the moment.
- 105. I often do dangerous things without stopping to think about the result.
- 129. I am usually somewhat restless.
- 153. I often leave things unfinished.
- 177. At times I am rather careless.
- 201. I usually say the first thing that comes into my mind.
- 225. I find it exciting to drive in a fast car.

False

- 21. I cannot image doing something reckless just for the fun of it.
- 45. I am usually able to keep my mind on one thing at a time.
- 69. I do almost everything very carefully.
- 93. I can work for a reasonable length of time without becoming bored.
- 117. I do not get bored one minute and excited about something the next.
- 141. The way I feel about people does not change very much.
- 165. I like to take time to plan things.
- 189. I never take unnecessary chances.
- 213. I have a well thought out reason for almost everything I do.
- 237. I seldom do foolish things without thinking.

## Social Introversion Scale (10)

True

- 22. I do not talk to people enough to let them really get to know me.
- 46. I choose to be alone as much as possible.
- 70. I avoid taking part in conversations around me.
- 94. I try to avoid people as much as I can.
- 118. I am happier alone than when with others.
- 142. I don't care whether or not the people around me are my friends.
- 166. I am not considered sociable.
- 190. I don't feel I need other people.
- 214. I like to keep my ideas to myself.
- 238. I seldom make much effort to meet new people.

False

- 10. If there are people around me, I like to be with them.
- 34. I enjoy talking to strangers.
- 58. I like to work with a group of people rather than alone.
- 82. I have several friends whom I can really trust.
- 106. I have a number of good friends.
- 130. I enjoy talking to almost anyone I meet.
- 154. I like to do things with friends whenever I can.
- 178. I enjoy being neighborly.
- 202. I truly enjoy myself at social events.
- 226. When I'm not feeling well, I like to have someone around to comfort me.

## Self Depreciation Scale (11)

True

- 11. I long ago gave up any hope of ever amounting to anything.
- 35. I am only suited for the lowest and most simple sort of work.
- 59. I am of no use to anyone.
- 83. My whole life has been a big mistake.
- 107. People are better off when I am not around.
- 131. I do not deserve kindness from others.
- 155. I am not very kind.
- 179. I often show poor judgement about things.
- 203. People don't like me because I have so many faults.
- 227. I am not the type of person one remembers after one meeting.

False

- 23. I am worthy of "the good things in life".
- 47. I am the sort of person who can be depended upon.
- 71. I think my parents have reason to be proud of me.
- 95. When I do things, I usually do them quite well.
- 119. I am an interesting person to talk with.
- 143. I enjoy the respect of most people who know me.
- 167. I think I would make a very good leader.
- 191. I feel capable of handling many difficult jobs.
- 215. I consider myself to be a generous and pleasant person.
- 239. I often have something to say that is worth listening to.

## Deviation Scale (12)

True

- 12. I have periods when my mind races ahead so fast that I cannot think clearly.
- 24. There have been days when I have done things without being able to recall anything at all.
- 36. I sometimes have convulsions and seizures that I cannot control.
- 48. Life is not worth living for me.
- 60. I have nightmares almost every night.
- 72. I have strange fears of places and things.
- 84. I frequently think of the same silly thing over and over for hours.
- 96. I have no interest at all in the opposite sex.
- 108. I frequently experience terrible headaches.
- 120. If things don't improve for me I may have to do something violent or dangerous.
- 132. There have been periods of time when I have used alcohol to excess.
- 144. I do not care what happens to me.
- 156. I would enjoy watching someone suffer great pain.
- 168. I have often used dangerous drugs and chemicals.
- 180. I am very much attracted to members of my own sex.
- 192. I have been in serious trouble with the law.
- 204. I spend a great deal of time day dreaming about things that only I know about.
- 216. I have been planning to do away with myself.
- 228. I do not care for anyone very much.
- 240. I always have difficulty sleeping.

APPENDIX B

## Standard and Faking Instructions



(STANDARD INSTRUCTIONS)

INSTRUCTIONS

We are conducting research on a new personality inventory and would appreciate your cooperation.

On the following pages you will find a series of statements which a person might use to describe himself. Read each statement and decide whether or not it describes you. Then indicate your answer on the separate answer sheet. If you agree with a statement or decide that it does describe you, answer TRUE. If you disagree with a statement or feel that it is not descriptive of you, answer FALSE.

(FAKE GOOD ADJUSTMENT)

INSTRUCTIONS

We are conducting research on a new personality inventory and would appreciate your cooperation.

Assume that you are in a situation where it would benefit you greatly to appear very well adjusted on this questionnaire. As you read the items, respond so that you present yourself as someone without any psychological problems or personality faults. In other words, try to fake this test so that the results will show that you are better than you really are. Although you may feel that you would never represent yourself dishonestly, please try to do so for the study. However, beware that the inventory has certain features designed to detect "faking" (which you want to avoid). Do your best to fake out the inventory.

(FAKE MALADJUSTMENT)

INSTRUCTIONS

We are conducting research on a new personality inventory and would appreciate your cooperation.

Assume that you are in a situation where it would benefit you greatly to actually appear mentally disturbed on this questionnaire. As you read the items, respond so that you present yourself as someone with serious psychological problems. Although you may feel you would never represent yourself dishonestly, please try to do so for the study. However, beware that the inventory has certain features intended to detect "faking" (which you want to avoid). Do your best to fake out the inventory.

APPENDIX C

Tukey Test Results

# TUKEY TEST RESULTS

	Hypochondriasis			Depression			Denial		
	2	1	3	2	1	3	1	3	2
Groups:	2.32	4.81	13.56	1.40	2.93	14.50	5.19	7.08	9.36
Means:									
Difference		2.49**	11.24**		1.53*	13.10**		1.36**	4.17**
Between			8.75**			11.57**			2.69**
Means									

	Interpersonal Problems			Social Deviation			Persecutory Ideas		
	2	1	3	2	1	3	2	1	3
Groups:	7.50	10.35	13.04	4.92	7.23	13.02	4.48	5.72	13.94
Means:									
Difference		2.85**	5.54**		2.31**	8.10**		1.24	9.46**
Between			2.69**			5.79**			8.22**
Means									

\*  $p < .05$

\*\*  $p < .01$

TUKEY TEST RESULTS-CONTINUED

	Social Introversion			Self Depreciation			Deviation		
Groups:	2	1	3	2	1	3	2	1	3
Means:	2.18	3.99	14.06	.68	1.87	13.18	1.92	3.79	13.58
Difference Between Means		1.81*	11.88** 10.07**		1.19	12.50** 11.31**		1.87**	11.66** 9.79**

	Anxiety			Thinking Disorder			Impulse Expression		
Groups:	2	1	3	2	1	3	2	1	3
Means:	4.24	7.86	13.78	3.74	5.12	13.52	5.96	10.26	13.50
Difference Between Means		3.62	9.54** 5.92**		1.38*	9.78** 8.40**		4.30**	7.54** 3.24**

\* p<.05

\*\* p<.01

APPENDIX D

Plot of Cases Based on  
Discriminant Analysis Results

DISCRIMINANT ANALYSIS OF MPI DATA, NJC FIRING STUDY  
 PLOT OF DISCRIMINANT SCORE 1 (HORIZONTAL) VS. DISCRIMINANT SCORE 2 (VERTICAL). • INDICATES A GROUP CENTROID.

